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Mr. William N. Caudle
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Gravels and small rocks, up to 4 or 5 inches in diameter, had been broken by the impact.

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The nose ring had sheared off, but no other structural damage was apparent in the unit at the time of recovery. The crater for Experiment 1 was similar to the crater for Experiment 2. For this reason, the craters will be described in detail further below.

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Experiment 2, Figure 2, hit in a small, flat, dry-wash between sand hummocks.

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The nose ring had sheared off, but no other structural damage was apparent in the unit at the time of recovery.

Description of Craters:

The craters for these experiments (see Figures 1 and 2) were typical for this type of impact in all but the softest or hardest of soils.

The crater and its rays (ejecta) appear darker than the adjacent ground surface immediately after impact. The darker color is due to the higher moisture content of the expelled material, which comes from just below the drier ground surface. Immediately after impact, the crater and its rays are easily visible to an untrained observer within perhaps 20 feet. From previous experience, we can state that the crater and its rays would be strikingly visible to an airborne observer or on airphotos, immediately after impact.

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Applicability of These Experiments:

Exceptions
are saturated loose sands, soft clays (shear strength less than 500 psf), and stiff-fissured clays. In the former two cases, the crater would be very small, and the penetration would be greater. In the latter case, the blocky nature of the rays and the floor material could be detected by the trained eye.

We would not expect distinct craters to form in rocks or very rocky soils.

Suggestions For Search:

Because we are not aware of the search techniques which have been used, some of the following suggestions may be redundant. All of the following suggestions should be made Standard Procedure for future accidents of this type.

Exhaustive airphoto coverage is required. We recommend stereo strips, with at least 60 percent overlap, flown at perhaps 1,000 feet above terrain. The films to be used should include normal-contrast BW, high-contrast BW, color, and infra-red. This coverage should be obtained as soon as possible. The photos should be studied jointly by airphoto interpretation experts and experts in ground impact.

The magnetometer
is easier to use, but depends on the magnetism of the object. For example, a common metal detector might be quite useful since the object is likely within 5 feet of the surface. If the unit is not magnetic, an adaptation of the gravimeter could probably be made for speedy search.

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Figure 1

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